In the claims

Please amend the claims as follows:

Claims 1 to 10 (cancelled)

11. (new) A method of assembling traffic from a plurality of users for transmission over an ATM connection, said method comprising:

assembling the plurality of users' traffic into respective mini-cells;

for each of said plurality of users' traffic, storing information pertaining to a mini-cell length associated with that user's mini-cells; and

multiplexing the mini-cells into ATM cells.

12. (new) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

13. (new) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

14. (new) A method as claimed in claim 11, wherein the information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at an interface of an ATM network hosting the ATM connection..

15. (new) A method as claimed in claim 14, wherein the interface comprises a look-up table.

16. (new) A method as claimed in claim 15, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing said mini-cell length indicator at an entry associated with that user in the look-up table.

17. (new) A method as claimed in claim 16, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

18. (new) A method as claimed in claim 16, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

19. (new) A method as claimed in claim 11, wherein the ATM connection comprises a virtual connection (VC).

20. (new) A method as claimed in claim 19, wherein a plurality of VCs are configured on the ATM connection.

21. (new) A method as claimed in claim 11, wherein the information pertaining to a mini-cell length associated with a user's mini-cells comprises a correspondence between a connection identifier and a mini-cell length indicator for that user.

22. (new) A method as claimed in claim 21, wherein said correspondence is derived from information to be transmitted in a service specific control (SCF) field of that user's mini-cells.

23. (new) A method as claimed in claim 11, wherein a sequence number is provided for a mini-cell.

24. (new) A method as claimed in claim 23, wherein said mini-cell sequence number is contained in a mini-cell start pointer.

25. (new) A method as claimed in claim 24, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells.

26. (new) A method as claimed in claim 11, wherein a sequence number is provided for each ATM cell containing mini-cells.

27. (new) A method as claimed in claim 26, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells and the ATM cell sequence number is included in the mini-cell start pointer.

28. (new) A method as claimed in claim 26, wherein the ATM cell sequence number is included in an AUU bit of a header of an ATM cell.

29. (new) A method as claimed in claim 26, wherein the ATM cell sequence number is defined by a single bit.

30. (new) A method as claimed in claim 11, wherein at least one of said users is allocated variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.

31. (new) A method of transmitting traffic from a plurality of users over an ATM connection, said method comprising:

assembling the plurality of users' traffic into respective mini-cells;

for each of said plurality of traffic users, storing information pertaining to a mini-cell length associated with that user's mini-cells;

multiplexing the mini-cells into ATM cells;

transmitting the ATM cells over the ATM connection; and,

at an egress of the ATM connection, determining from the stored information the respective mini-cells lengths of said users' mini-cells in order to delineate said mini-cells in each ATM cell received at said egress.

32. (new) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

33. (new) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells is derived as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

34. (new) A method as claimed in claim 31, wherein the information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at an interface of an ATM network hosting the ATM connection.

35. (new) A method as claimed in claim 34, wherein the interface comprises a look-up table.

36. (new) A method as claimed in claim 35, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing said mini-cell length indicator at an entry associated with that user in the look-up table.

37. (new) A method as claimed in claim 36, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

38. (new) A method as claimed in claim 36, wherein the step of storing the information pertaining to the mini-cell length associated with a user's mini-cells comprises storing information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

39. (new) A method as claimed in claim 34, wherein the stored information pertaining to the mini-cell lengths for the plurality of users' traffic is stored at the interface is updated to accommodate users requiring variable length mini-cells.

40. (new) A method as claimed in claim 39, wherein the stored information at the interface is updated when establishing mini-cell connection set-up.

41. (new) A method as claimed in claim 31, wherein the ATM connection comprises a virtual connection (VC).

42. (new) A method as claimed in claim 41, wherein a plurality of VCs are configured on the ATM connection.

43. (new) A method as claimed in claim 31, wherein the information pertaining to a mini-cell length associated with a user's mini-cells comprises a correspondence between a connection identifier and a mini-cell length indicator for that user.

44. (new) A method as claimed in claim 43, wherein said correspondence is derived from information transmitted in a service specific control (SCF) field of that user's mini-cells.

45. (new) A method as claimed in claim 31, wherein a sequence number is provided for in a mini-cell.

46. (new) A method as claimed in claim 45, wherein said mini-cell sequence number is contained in a mini-cell start pointer.

47. (new) A method as claimed in claim 46, wherein omission or corruption of mini-cells in a sequence is detected from said mini-cell sequence number and said omitted or corrupted mini-cells are selectively retransmitted.

48. (new) A method as claimed in claim 47, wherein the mini-cell sequence number is defined by a single bit.

49. (new) A method as claimed in claim 46, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells.

50. (new) A method as claimed in claim 31, wherein a sequence number is provided for each ATM cell containing mini-cells.

51. (new) A method as claimed in claim 50, wherein a mini-cell start pointer is provided in every ATM cell containing mini-cells and the ATM cell sequence number is included in the mini-cell start pointer.

52. (new) A method as claimed in claim 50, wherein the ATM cell sequence number is included in an AUU bit of a header of an ATM cell.

53. (new) A method as claimed in claim 50, wherein the ATM cell sequence number is defined by a single bit.

54. (new) A method as claimed in claim 31, wherein at least one of said users is allocated variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.

55. (new) A method as claimed in claim 31, wherein the stored information pertaining to a mini-cell length associated with a user's mini-cells includes information pertaining to a state of that user's mini-cell connection.

56. (new) A method as claimed in claim 55, wherein said stored information includes information pertaining to any dynamically varying parameters for the user's mini-cell connection.

57. (new) A method as claimed in claim 55, wherein it includes comparing the stored information with information received at the ATM connection egress as a mechanism for detecting errors in a mini-cell connection.

58. (new) An ATM traffic assembly apparatus for assembling traffic from a plurality of users for transmission over an ATM connection, said assembly apparatus comprising:

means for assembling the plurality of users' traffic into respective mini-cells;

means for storing information pertaining to a mini-cell length associated with a user's mini-cells for each of said plurality of users' traffic; and

a multiplexer for multiplexing the mini-cells into ATM cells.

59. (new) An apparatus as claimed in claim 58, wherein the means for storing the information pertaining to a mini-cell length associated with a user's mini-cells derives an explicit mini-cell length indicator for that user's mini-cells from a connection identifier for that user's mini-cells.

60. (new) An apparatus as claimed in claim 58, wherein the means for storing the information pertaining to a mini-cell length associated with a user's mini-cells derives an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

61. (new) An apparatus as claimed in claim 58, wherein the storing means is arranged to store the information pertaining to the mini-cell lengths for the plurality of users' traffic at an interface of an ATM network hosting the ATM connection.

62. (new) An apparatus as claimed in claim 61, wherein the interface comprises a look-up table.

63. (new) An apparatus as claimed in claim 62, wherein storing means is arranged to store the information pertaining to the mini-cell length associated with a user's mini-cells at an entry associated with that user in the look-up table.

64. (new) An apparatus as claimed in claim 63, wherein the storing means is arranged to store a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

65. (new) An apparatus as claimed in claim 16, wherein the storing means is arranged to store contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

66. (new) An apparatus as claimed in claim 58, wherein the ATM connection comprises a virtual connection (VC).

67. (new) An apparatus as claimed in claim 66, wherein a plurality of VCs are configured on the ATM connection.

68. (new) An apparatus as claimed in claim 58, wherein the storing means is arranged to derive the information pertaining to a mini-cell length associated with a user's mini-cells as a correspondence between a connection identifier and a mini-cell length indicator for that user.

69. (new) An apparatus as claimed in claim 68, wherein said storing means derives said correspondence from information to be transmitted in a service specific control (SCF) field of that user's mini-cells.

70. (new) An apparatus as claimed in claim 58, wherein it is arranged to provide a sequence number for a mini-cell.

71. (new) An apparatus as claimed in claim 70, wherein it is arranged to encapsulate said mini-cell sequence number in a mini-cell start pointer.

72. (new) An apparatus as claimed in claim 71, wherein it is arranged to provide a mini-cell start pointer in every ATM cell containing mini-cells.

73. (new) An apparatus as claimed in claim 58, wherein it provides a sequence number for each ATM cell containing mini-cells.

74. (new) An apparatus as claimed in claim 73, wherein it provides a mini-cell start pointer in every ATM cell containing mini-cells and the ATM cell sequence number is included in the mini-cell start pointer.

75. (new) An apparatus as claimed in claim 73, wherein the ATM cell sequence number is included in an AUU bit of a header of an ATM cell.

76. (new) An apparatus as claimed in claim 73, wherein the ATM cell sequence number is defined by a single bit.

77. (new) An apparatus as claimed in claim 58, wherein it allocates at least one of said users a variable length mini-cells and wherein it updates the stored information pertaining to a mini-cell length associated with that user's mini-cells.

78. (new) A system for transmitting traffic from a plurality of users over an ATM connection, said system comprising:

an ATM traffic assembly apparatus for assembling the plurality of users' traffic into respective mini-cells and, for each of said plurality of traffic users, storing information pertaining to a mini-cell length associated with that user's mini-cells;

a multiplexer for multiplexing the mini-cells into ATM cells and dispatching the ATM cells onto the ATM connection; and,

means at an egress of the ATM connection for determining from the stored information the respective mini-cells lengths of said users' mini-cells in order to control a means for delineating said mini-cells in each ATM cell received at said egress.

79. (new) A system as claimed in claim 78, wherein the assembly apparatus derives information pertaining to a mini-cell length associated with a user's mini-cells as an explicit mini-cell length indicator from a connection identifier for that user's mini-cells.

80. (new) A system as claimed in claim 78, wherein the assembly apparatus derives information pertaining to a mini-cell length associated with a user's mini-cells as an implicit mini-cell length indicator by interpreting information contained in a service specific control (SCF) field for that user's mini-cells.

81. (new) A system as claimed in claim 78, wherein theassebley apparatus stores the information pertaining to the mini-cell lengths for the plurality of users' traffic at an interface of an ATM network hosting the ATM connection.

82. (new) A system as claimed in claim 81, wherein the interface comprises a look-up table.

83. (new) A system as claimed in claim 82, wherein the assembly apparatus stores the information pertaining to the mini-cell length associated with a user's mini-cells at an entry associated with that user in the look-up table.

84. (new) A system as claimed in claim 83, wherein the assembly apparatus stores a connection identifier for that user's mini-cells at the entry associated with that user in the look-up table.

85. (new) A system as claimed in claim 83, wherein the assembly apparatus stores information contained in a service specific control (SCF) field for that user's mini-cells at the entry associated with that user in the look-up table.

86. (new) A system as claimed in claim 81, wherein the assembly apparatus updates the information pertaining to the mini-cell lengths for the plurality of users' traffic stored at the interface to accommodate users requiring variable length mini-cells.

87. (new) A system as claimed in claim 86, wherein assembly apparatus updates the stored information at the interface when establishing mini-cell connection set-up.

88. (new) A system as claimed in claim 78, wherein the ATM connection comprises a virtual connection (VC).

89. (new) A system as claimed in claim 88, wherein a plurality of VCs are configured on the ATM connection.

90. (new) A system as claimed in claim 78, wherein the assembly apparatus stores information pertaining to a mini-cell length associated with a user's mini-cells comprising a correspondence between a connection identifier and a mini-cell length indicator for that user.

91. (new) A system as claimed in claim 90, wherein said correspondence is derived from information transmitted in a service specific control (SCF) field of that user's mini-cells.

92. (new) A system as claimed in claim 78, wherein the assembly apparatus provides a sequence number in a mini-cell.

93. (new) A system as claimed in claim 92, wherein said assembly apparatus encapsulates the mini-cell sequence number in a mini-cell start pointer.

94. (new) A system as claimed in claim 93, wherein the means at the ATM connection egress detects omission or corruption of mini-cells in a sequence said mini-cell sequence number and controls said assembly apparatus to selectively retransmit said omitted or corrupted mini-cells.

95. (new) A system as claimed in claim 94, wherein the mini-cell sequence number is defined by a single bit.

96. (new) A system as claimed in claim 93, wherein the assembly apparatus provides a mini-cell start pointer in every ATM cell containing mini-cells.

97. (new) A system as claimed in claim 78, wherein the assembly apparatus provides a sequence number for each ATM cell containing mini-cells.

98. (new) A system as claimed in claim 97, wherein the assembly apparatus provides a mini-cell start pointer in every ATM cell containing mini-cells and includes the ATM cell sequence number in the mini-cell start pointer.

99. (new) A system as claimed in claim 97, wherein the assembly apparatus includes the ATM cell sequence number in an AUU bit of a header of an ATM cell.

100. (new) A system as claimed in claim 97, wherein the ATM cell sequence number is defined by a single bit.

101. (new) A system as claimed in claim 78, wherein the assembly apparatus allocates at least one of said users with variable length mini-cells and wherein the stored information pertaining to a mini-cell length associated with that user's mini-cells is updated.

102. (new) A system as claimed in claim 78, wherein the assembly apparatus includes information pertaining to a state of a user's mini-cell connection in the stored information pertaining to a mini-cell length associated with that user's mini-cells includes.

103. (new) A system as claimed in claim 102, wherein said stored information includes information pertaining to any dynamically varying parameters for the user's mini-cell connection.

104. (new) A system as claimed in claim 102, wherein the means at the ATM connection egress is arranged to compare the stored information with information received at said ATM connection egress as a mechanism for detecting errors in a mini-cell connection.